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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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10/803,999

03/19/2004

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11/13/2006

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EXAMINER

LEE, SIN J

ART UNIT

PAPER NUMBER

1752

DATE MAILED: 11/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/803,999

Applicant(s)

TAKAHASHI ET AL.

Examiner

Sin J. Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 31 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 2-15 and 18-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-15 and 18-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 10/3/06.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

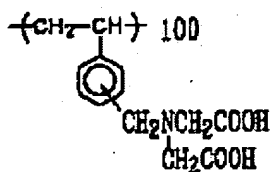
1. Applicants canceled claims 16 and 17.
2. In view of the amendment of August 31, 2006, previous 103(a) rejection on claims 2-19 over Tan et al (JP'635) and Takita et al (EP 0 871 070 A2) is hereby withdrawn.

### *Claim Rejections - 35 USC § 103*

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
4. Claims 2-15 and 18-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tan et al (JP 11-038635 and its full English translation provided by PTO) in view of Kawauchi (EP 0 992 850 A2).

Tan teaches a positive type photosensitive lithographic printing plate, which is made by forming a middle layer containing polymer compound having specified repeating units (1), (2), or (3) on an aluminum substrate (which has undergone hydrophilicizing treatment) and then forming a positive type photosensitive layer (which contains alkaline soluble polymer such as polyhydroxy styrene, o-quinone diazido compound, printout agent, dyes and others) on the middle layer (see abstract, claim 1, [0040], [0041], [0052] of English translation). As one of examples for the repeating units (1), (2) or (3), Tan lists the following (see [0021])

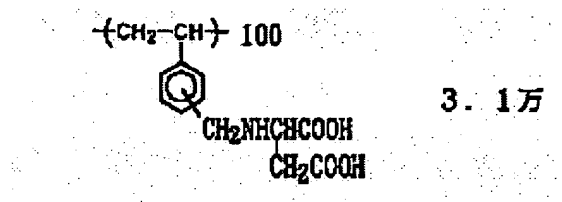
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, and this repeat unit is exemplified in Tan's working example 3 as well (see Table 1 in [0092]). Tan teaches ([0019]) that the repeat unit (1), (2) or (3) is present in his polymer in the amount of more than 40 mol% preferably. Tan also teaches ([0023]) that his polymer has Mw of 2,000-600,000 preferably. Tan also teaches the amount of coating for his middle layer to be 5-50 mg/m<sup>2</sup> preferably (see [0026]). Tan also discloses the following repeating unit as well



as one of examples for the repeating units (1), (2) or (3) (see [0021]). Tan teaches that his polymer containing the repeating units of formula (1), (2) or (3) can be a homopolymer as well as a *copolymer* (see [0012] – also, in [0021], Tan teaches that *methyl methacrylate* or *methyl acrylate* can be used as comonomers). Tan teaches that his photosensitive layer can be imaged with infrared rays and he also teaches the use of semiconductor laser (see [0065] of English translation).

Therefore, Tan teaches inventions of present claims except for the (i) present limitation with respect to the polymer further containing an onium group and/or an acidic group and (ii) present infrared absorbing agent.

With respect to the limitation (i), Kawauchi teaches a positive working planographic printing plate precursor comprising an intermediate layer and a positive working photosensitive layer, wherein the intermediate layer contains a polymer comprising a monomer unit having an acid group and a monomer unit having an onium

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group (see abstract, [0015], [0065]). By using such an intermediate layer, Kawauchi teaches that one can obtain an improved adhesion between the photosensitive layer and the substrate as well as remarkable improvement in the durability in printing (see [0015]. Kawauchi teaches that as the acid group, -COOH is particularly preferable (see [0020]). Since Tan's middle layer polymer already contains a repeating unit having -COOH groups (and since Tan teaches that his middle layer polymer can be a copolymer), it would have been obvious to one skilled in the art to further include a repeat unit containing an onium group in Tan's middle layer polymer in order to obtain a good adhesion between the photosensitive layer and the aluminum substrate and to obtain remarkable improvement in the durability in printing as taught by Kawauchi. Kawauchi also teaches ([0032]) that the intermediate layer polymer can comprises two or more kinds of monomer units having an acid group and two or more kinds of monomer units having an onium group. Therefore, it would also have been obvious to one skilled in the art to further include another repeat unit containing -COOH group in Tan's middle layer polymer with a reasonable expectation of obtaining a printing plate having improved adhesion between the photosensitive layer and the substrate and improved durability in printing as taught by Kawauchi. Therefore, Tan in view of Kawauchi would render obvious present inventions of claims 2-15, 18, 19 and 26-31.

With respect to present limitation as to the infrared absorbing agent, as already explained above, Tan clearly teaches that his photosensitive layer can be imaged with infrared rays and he teaches the use of semiconductor laser (see [0065] of English translation). It is very well known in the art, as evidenced by Kawauchi, (see [0081]) to

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use a compound, which generates heat by absorbing light in an infrared region, when using infrared rays as the light source in the exposure step. *Specifically*, Kawauchi teaches cyanine dyes shown in [0102]-[0103] as having satisfactory compatibility with an alkali-soluble polymeric compound in the photosensitive layer. Since Tan teaches the use of infrared rays (such as semiconductor laser) and since Tan's photosensitive layer contains an alkali-soluble polymeric compound, it would have been obvious to one skilled in the art to use cyanine dyes shown in Kawauchi as the compound generating heat by absorbing infrared light in order to obtain good compatibility with the alkali-soluble polymeric compound. Therefore, Tan in view of Kawauchi would render obvious present inventions of claims 20-25.

### ***Response to Arguments***

5. Applicants argue that Tan's image is not formed by heat generated from an infrared absorbing agent due to infrared ray exposure and thus there is no need for Tan's recording layer to contain an infrared absorbing agent. However, as explained above, Tan clearly teaches that his photosensitive layer can be imaged with infrared rays and he even teaches the use of semiconductor laser, and it is very well known in the art (as evidenced by Kawauchi) to use a compound, which generates heat by absorbing light in an infrared region, when using infrared rays as the light source in the exposure step. Since Kawauchi specifically teaches those cyanine dyes shown in [0102]-[0103] as having satisfactory compatibility with an alkali-soluble polymeric compound in the photosensitive layer, it would have been obvious to one skilled in the art to use those cyanine dyes in Tan's photosensitive layer (which can be imaged with

infrared rays) as the compound generating heat by absorbing infrared light in order to obtain good compatibility with the alkali-soluble polymeric compound contained in the photosensitive layer. Applicants also argue that by using present intermediate layer, one can obtain improvement in adhesion between the support and the recording layer and in printing durability. However, such results are nothing unexpected in view of Kawauchi's teaching. That is, Kawauchi *already* teaches that by using an intermediate layer, which contains a polymer comprising a monomer unit having an acid group and a monomer unit having an onium group, in a positive working planographic printing plate precursor, one can obtain an improved adhesion between the photosensitive layer and the substrate as well as remarkable improvement in the durability in printing.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sin J. Lee whose telephone number is 571-272-1333. The examiner can normally be reached on Monday-Friday from 9:00 am EST to 5:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly, can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

*S. Lee*

S. Lee

November 10, 2006

*Sin Lee*

**SIN LEE  
PRIMARY EXAMINER**